



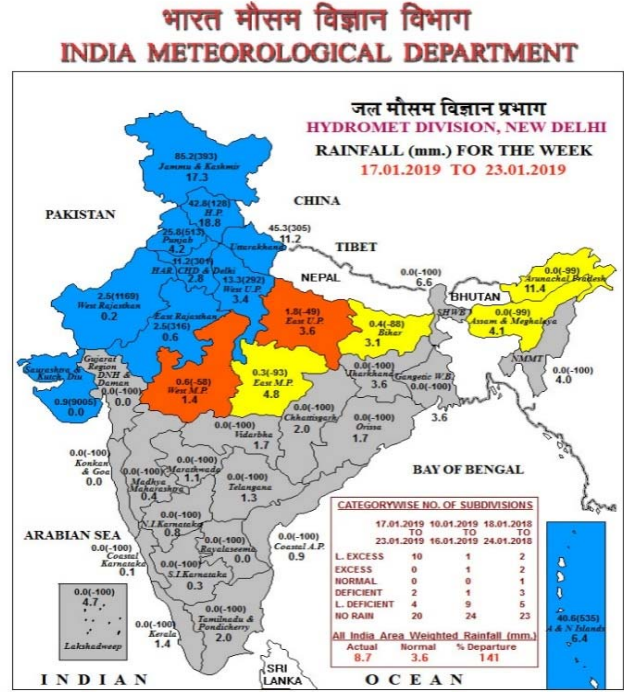
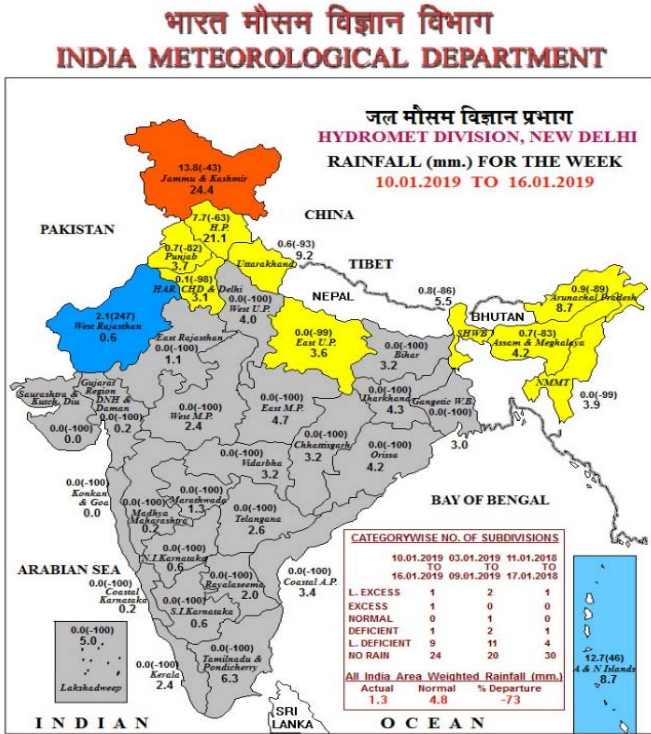
National Agromet Advisory Service Bulletin
Based on
Extended Range Weather Forecast (ERFS)

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Realized Rainfall and Extended Range Forecast (Rainfall and Temperatures)

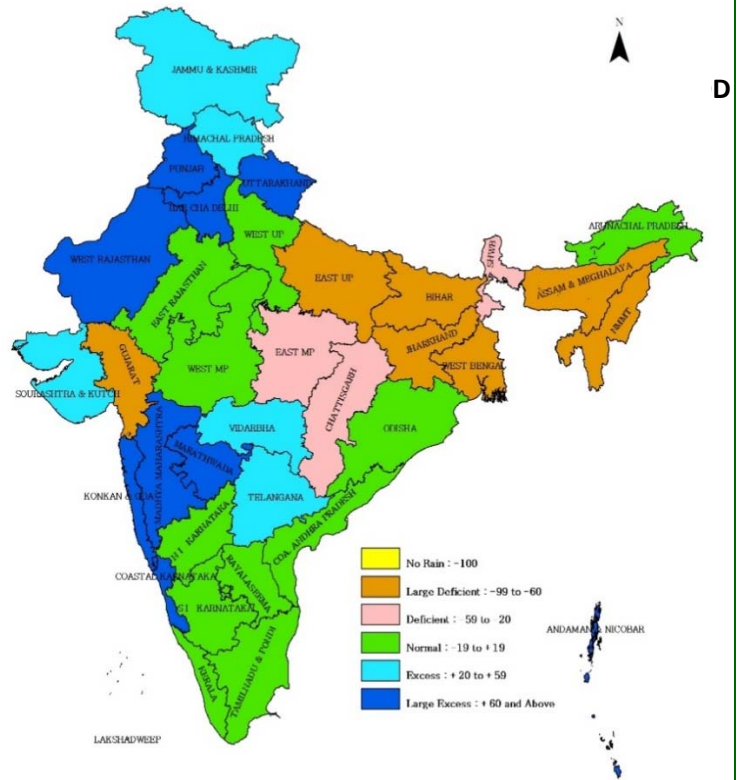
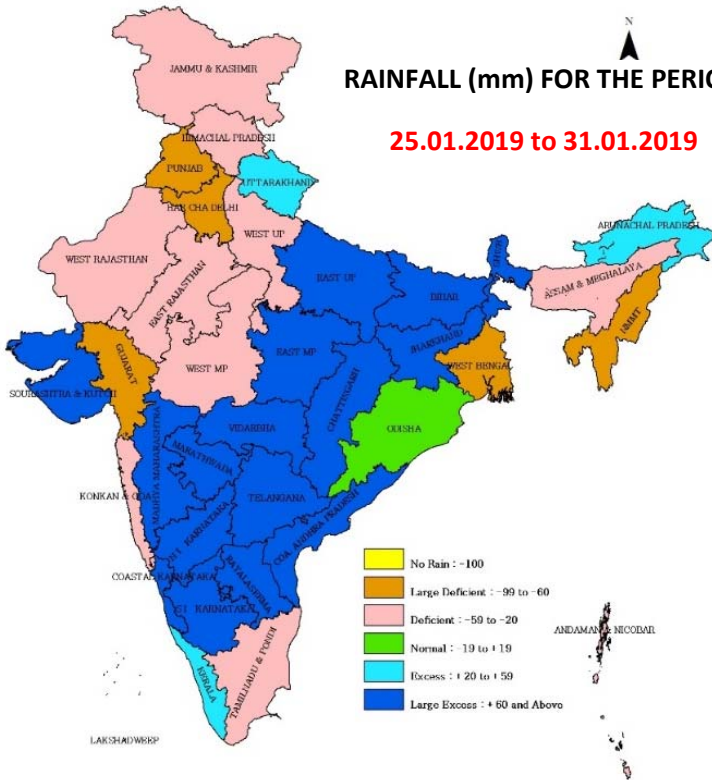
Realized Rainfall (10th to 23rd January 2019)



- Normal or above normal rainfall occurred in both the weeks in West Rajasthan and Andaman & Nicobar Islands.
- Normal or above normal rainfall occurred in either of the two weeks in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttarakhand West Uttar Pradesh, East Rajasthan and Saurashtra & Kutch.
- Below normal rainfall / no rain occurred over rest of the country.

Extended Range Forecast System

Rainfall forecast maps for the next 2 weeks (IC – 23 January)
(25th January to 7th February 2019)



Extended Range Rainfall Forecast

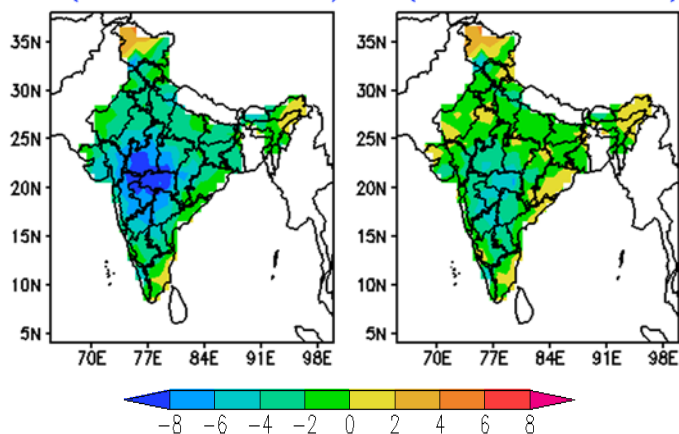
- Week 1 (25.01.2019 to 31.01.2019) and Week 2 (01.02.2019 to 07.02.2019):** Rainfall associated with WD over extreme north India and adjoining eastern parts (Uttarakhand, UP, Bihar and north-east met-subdivisions). Southern part of Bay of Bengal will be active during the period.

**Maximum and Minimum temperature anomaly ($^{\circ}\text{C}$) forecast
for next 2 weeks (IC – 23 January)
(25th January to 7th February 2019)**

MME Bias Corrected Tmax Anomaly (Deg)

(Week1: 25Jan–31Jan)

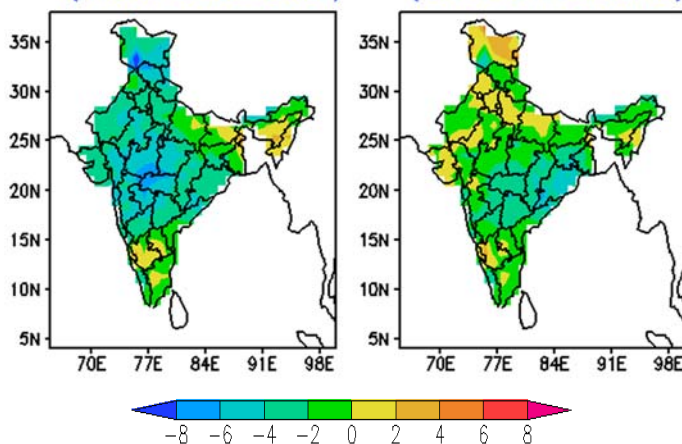
(Week2: 01Feb–07Feb)



MME Bias Corrected Tmin Anomaly (Deg)

(Week1: 25Jan–31Jan)

(Week2: 01Feb–07Feb)



Maximum Temperature (Tmax)

- **Week 1 (25.01.2019 to 31.01.2019):** Except isolated regions over extreme north India, eastern coastal belts and north east India, Tmax will be below normal over India.
- **Week 2 (01.02.2019 to 07.02.2019):** Almost similar patterns like week 1 with mostly below normal Tmax over central parts of India.

Minimum Temperature (Tmin)

- **Week 1 (25.01.2019 to 31.01.2019):** Mostly below normal Tmin over the country.
- **Week 2 (01.02.2019 to 07.02.2019):** Mostly below normal Tmin over the eastern and central belt.

Strategic Agricultural Planning based on rainfall during next two weeks till 07th February 2019

Agromet Advisories

Kerala

No rainfall received during the period from 01 to 24 January 2019 over Kerala. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- White powdery spots are seen on the leaves of cucurbitaceous vegetable. Apply 1.5 ml tebuconazole or 0.5 ml difenoconazole per one litre of water. After 10 days, apply 20 gram of *Trichoderma viride* per one litre of water to control powdery mildew disease of vegetables.
- Infestation of fruit fly can be observed in Bitter gourd. To control, setting up of pheromone trap (Cue lure @ 1/15 cent), spot application of 10 % jaggery containing 0.1 % malathion @ 1 spot/40 m² on underside of leaves at fortnight intervals is recommended.
- There is a chance of aphids in cowpea. Apply 2% neem oil emulsion or apply 20 gram *Verticillium lecanii* per one litre of water in 10 days intervals. If aphid attack is severe, apply 3 ml Imidacloprid or 2 gram Thiamethoxam per 10 litre of water.
- Coconut palms are seen affected by red palm weevil. After thorough cleaning of the crown region, apply 1 ml imidacloprid per one litre of water at spindle leaf area.

Karnataka

No rainfall received during the period from 01 to 24 January 2019 over different meteorological subdivisions of Karnataka viz, North Interior Karnataka, South Interior Karnataka and Coastal Karnataka. The extended range weather forecast provided for 25 to 31 January and 01 to 07 February over North Interior Karnataka is no rain for week-1 and above normal rain for week-2, over South Interior Karnataka is below normal for week-1 and above normal for week-2 and over coastal Karnataka is below normal for week-1 and above normal for week-2.

South Interior Karnataka

- Due to continuous dry spell since October month, the termite attack is common in horticulture and Forestry tree and shrubs hence to control apply Aldrin termiticides for control of termites.
- To protect the pulse grains from storage pests attack, apply oils of Castor/ linseed/honge/neem oil @ 3-5 ml per kg of grains.
- Leaf hopper and Powdery mildew disease incidence is more during before flowering and immediately after fruit formation to avoid its incidence go for spraying Carbaryl, 50WP @ 4g/litre of water or Imidachlorprid @ 0.3ml/ litre of water.
- Dry spell situation exists since one month, it is favorable for flowering and this weather also favorable for Powdery mildew diseases, So take up spraying Lamda Cyhalothrin 5EC @ 0.5 ml/ litre of water or sulphur dust (SULTAF) 80 W @ 3g/litre of water against the Powdery mildew diseases.

Tamil Nadu

No rainfall received during the period of 01 to 24 January 2019 over Tamil Nadu. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- Prevailing weather condition is favorable for Leafhopper, Mealy bug and Stem weevil incidence in cotton. To control sucking pest, spray Imidacloprid 200 SL 100 ml/ha (or) Fipronil 5%SC 1500-

2000 ml/ha. And for mealy bug incidence spray NSKE 5% (or) FORS 25 g/litre. Spray Carbaryl 50 WP 2.5 kg/ha (or) Carbofuran 3G 33.3 kg/ha to control stem weevil incidence

- In sorghum crop prevailing weather condition is conducive for Smut disease in sorghum, In order to control spray Mancozeb @ 1kg/ha (or) Carbandazine @ 500 g/ha
- Prevailing weather condition is conducive for attack of stink bug in cumbu ,to avoid it spray Carbaryl 50 WP @ 750 g / ha Chilli
- Climatic condition is favourable for Thrips and Aphids infestation in chilli. Apply Carbofuran 3% G @ 33 kg/ha or phorate 10 % G @ 10 kg/ha orgo for Spray any one of the following insecticide Imidacloprid 17.8 % SL 3.0 ml/10 lit. Emamectin benzoate 5 % SG 4 g/10 lit.

Maharashtra

No rainfall received during 01 to 24 January 2019 over different meteorological sub divisions of the state viz., Konkan, Madhya Maharashtra, Vidarbha and Marathwada. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) over all the subdivisions of Maharashtra is below normal for week-1 and above normal for week-2.

Dry weather prevailed over Maharashtra. Under this conditions the following advisories have been suggested.

Marathwada

- For management of field rats during grain filling stage in wheat crop, prepare a mixture with 1 part Zinc Phosphide + 1 part Jaggery + 50 parts wheat flour and edible oil.
- To reduce the infestation of pod borer in chickpea crop take spray of Quinalphos 25 % @ 400 ml or Emamectin benzoate 5 % @ 80 gram per acre.
- For management of aphids in safflower, spray of Dimethoate 30 EC @ 260 ml or Acephate 75 SP 320 gram per acre.
- Irrigation management should be done in vegetable crops.

Madhya Maharashtra

- For pod borer in chick pea install Helilure traps @ 5 no./ ha If the incidence is more spray Chlorpyrifos/ Quinolphos @ 15-20 + 10 litre water.
- For control of powdery mildew disease in the late pruned ber, spray 80 WP wetttable sulphur 20gm and karathane 5 ml per 10 Litre water in alteration at 10 – 12 days interval.
- For good fruit setting in Mango spraying of 0:52:34 @ 100 gm per 10 litre water is recommended.
- Necessary arrangements for sowing of summer groundnut and sunflower should be done and sowing should be done in second fortnight of January.

Konkan

- There is possibility of incidence of tea mosquito bug and thrips during fruit bearing stage of cashewnut, if incidence is noticed spray Lambda cyhalothrin 5%EC @6 ml per 10 litre of water.
- Farmers are advised to provide irrigation to fruit crop nursery regularly.

Vidarbha

- For control of aphids in wheat, undertake spray of dimethoate 30 EC @ 500 ml or methyl demeton 25 EC @ 400 ml in 500 litres of water, after forecasted spell of rains.
- In view of forecasted light rains, any schedule of irrigation at seed development stage (80 days stage) in safflower may be postponed.
- In view of forecasted light rains, any schedule of irrigation in chickpea at pod formation may be postponed. To control *helicoverpa* pod borer damage above ETL (1 larva/meter or 5% damaged pods) undertake spray of Chlorantraniliprole 18.5% SC 2.5 ml.
- Sowing of summer groundnut (TAG 24, SB-11) can normally be undertaken from second fortnight of January as cold weather subsides to first week of February.

Chhattisgarh

No rainfall received over Chhattisgarh during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and normal for week-2.

- At present wheat is at CRI/tillering stage and these stages are critical for moisture. Therefore, it is advised to irrigate the crop and apply nitrogen at CRI stage.
- Farmers are advised to give irrigation in maize crop.
- If Yellow Vein Mosaic disease observed in pulse crop, then destroy the affected plants and spray Metasystox or Rogor insecticide @ 1 ml/litre water.
- The vegetable which are transplanted in last month of December should be given nitrogenous fertilizers after intercultural operations.
- Save calves from cold (night temperature), use heater and curtains to save them.

Odisha

No rainfall received over Odisha during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and normal for week-2.

Dry conditions prevailing over the state. The following advisories need to be followed.

- The rice seedlings for summer crop at 4-5 leaf stage are ready for transplanting. Plant 2 to 3 seedling per hill shallow and upright in lines. Seedling root dip should be done with 10 kg Azospirillum in 6 litre water before transplanting.
- Spodoptera in cabbage and cauliflower may be found. To control, alternate spraying of B.T product 1 kg or 250 LE SLNPV/acre at weekly interval or use 4 Trichogramma cards per acre.
- Farmers are advised to complete the sowing of summer groundnut and sunflower by this week.

Uttar Pradesh

Amount of rainfall received over East Uttar Pradesh region is 2.8 mm (74% deficit) and West Uttar Pradesh is 13.5 mm (11% excess) during 01 to 24 January 2019. The extended range weather forecast provided for two weeks (25 to 31 January and 01 to 07 February) for West and East Uttar Pradesh is above normal for both the weeks.

- Weather will be dry during this week, therefore, farmers are advised to irrigate their *Rabi* crops as per need. Irrigation should be taken up at CRI and tillering which is critical stages of the wheat

crop. Top dress ¼ Urea after first irrigation at optimum moisture during CRI stage. Use 20 g/ha Metsulfuron or 2,4-D 500g/ha or Carfentrazone 50 g/ha with 300 lt.

- In Barley crop, top dressed 60 kg/ha Urea after first irrigation at optimum moisture. Sulfosulfuron 75% wp @ 33g/ha or Metribuzine 70 wp @ 250g/ha with 500 lt.
- Protection of Pea from Pod borer and Semi lopper, go for spraying Fenvelarate 0.4% DP 20-25 kg/ha or Quinalphos 20% EC 2.0 lt/ha or Malathion 50 % Ec 2.0 lt/ha with 500 to 600 lt water . Spray Soluble Sulpher (80%) 2.0 kg/ha or Tridemark 80 %EC with 500-600 lt.
- Light irrigation should be given at flowering and pod formation stage in mustard crop.
- If aphid are seen in mustard crop ,go for Chlorpyrifos 20% EC @ 1.0 lt/ha spray or monocrotophos 36 % S.L. @ 500 ml/ha with 500-600 litter of water solution.
- Light irrigation should be taken up in chickpea, pea and lentil at vegetative stage. And nipping must be taken up after 45 DOS.

Bihar

Amount of rainfall received over Bihar is 0.6 mm (94% deficit) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- Give 2nd irrigation in the timely sown wheat crop, which is in 40-50 days stage. In view of prevailing higher temperature, farmers are advised to maintain proper soil moisture in the crop field.
- Regular monitoring is advised for infestation of cut worm in potato crop. If infestation is observed in the crop field, spraying of Chlorpyrifos 20EC@2.5-3 ml per litre of water is advised.
- There is possibility of pod borer infestation in pea crop. To avoid the adverse effect, installation of Pheromone trap @ 3-4 traps per acre is advised when 15-20 % flowering is observed.
- Regular monitoring is advised for infestation of pod borers in pigeon pea, which reaches in flowering /pod formation stages. If infestation is found, spraying of Cartap hydrochloride @ 1.5ml/litre of water is advised.

West Bengal

No rainfall received over Gangetic West Bengal during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for both the weeks

- Air temperature is increasing gradually, which will aggravate the blight infestation in potato. Application of fungicide (Metalaxyl + Mancozeb mixture @ 2.5 gram per litre of water) should be done.
- There is a chance of aphid infestation due to increasing temperature in mustard. Keep continuous monitoring.

Jharkhand

No rainfall received over Jharkhand during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for both the weeks.

- Dry conditions prevailed in the state. Timely sown pulse crops like pea, lentil, gram etc. are at pod formation stage. If the crops are attacked by pod borer insect, spray insecticide Monochrotophos @ 1 ml per litre of water immediately.
- Mustard Crop is now approaching the maturity stage. Harvest the crops when siliqua turns into bright yellow colour and dry the harvested crop in the sun for 2-3 days before threshing.
- Farmers wishing to cultivate summer vegetables, specially cucurbitaceous plant like sponge gourd, bottle gourd, bitter gourd, pumpkin, water melon, musk melon etc. may sow the seeds of these vegetables in pit and maintain the distance between two pits.

Rajasthan

Amount of rainfall received over West Rajasthan is 4.6 mm (131% excess) and over East Rajasthan is 2.5 mm (39% deficit) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) for West Rajasthan is above normal for week-1 and below normal for week-2 and East Rajasthan is above normal for both the weeks.

- Due to low temperature in coming days to avoid frost injury apply irrigation, spray 0.1 % H₂SO₄ & fumigation on field at evening time. Better to use crop & weed residue for fumigation.
- Spray wettable sulphur 80 WP @2g/litre of water in mustard for the control of powdery mildew.
- To avoid attack of gram pod borer at 50% flowering stage, spray of NPV 250 LE 1 ml /litre water and second spray at 15 days BTK Dipel 8L 1.5 litre/ha.
- Top dressing of 1/4th of nitrogen (65 kg Urea) in opium poppy at flowering stage & spray Ridomil @3g/litre of water to control downy mildew.

Assam

Rainfall received over Assam is 1.4 mm (89% deficit) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- Against downy mildew in onion, farmers are advised to spray ridomil @ 2.5gram/litre at an interval of 10 days.
- Due to low night temperature and thick fog, farmers may observe aphid attack in rapeseed & mustard crop. To control this pest, spray Dimethoate 30EC or Chloropyriphos 20EC 0.5litre/ha with a spray volume of 500-700litre of water/ha.
- Protect poultry birds from cold by using gunny bags or plastic sheets around the poultry sheds during night.

Haryana

Rainfall received over Haryana is 13 mm rainfall (20% excess) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is above normal for both the weeks.

- Due to WD, farmers are advised to withhold irrigation and chemical spray till 24th January in crops like mustard, wheat, Barley, Gram, Berseem, sugarcane and vegetables.
- Due to fall in night temperature, high winds and cloudy conditions keep the animals warm under shed. Provide 50 grams iodized salt and 50 to 100 grams mineral mixture daily with animal feed/fodder to keep them healthy.

Punjab

Rainfall received over Punjab is 27.9 mm rainfall (95% excess) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is above normal for both the weeks.

- As heavy rain occurred at most places in the state, farmers are advised to drain out excess water from the fields. If wheat crop show deficiency of sulphur, broadcast 100 kg of Gypsum/acre and irrigate the field. Yellowing of leaves appear due to manganese deficiency in wheat crop, spray the crop with manganese sulphate.
- To locate the initial foci of yellow rust infection regularly monitor the wheat crop particularly in sub-mountainous regions and give spot application of Tilt/Shine/Bumper/Compass/Stilt/Markzole (1ml per litre) to manage the disease.
- Farmers are advised to monitor the symptoms of late blight in potato, if symptoms observed in the field then protect the crop by spraying Indofil M-45/Mass M-45/Markzeb/Antracole/Kavach @ 500-700 g or Mark copper/Copper oxychloride at 750-1000 g per acre using 250-350 litres of water per acre. During these days cut the haulm of seed crop of potato to produce virus free seed.
- To control the citrus canker, the infested plant parts like leaves, branches should be cut off and destroyed by burning. The pruned trees should be sprayed with Bordeaux mixture (2 : 2 : 250) immediately and apply Bordeaux paste to the cut surface and the trunk of the trees.

Himachal Pradesh

Himachal Pradesh has received 69.2 mm of rainfall during 01 to 24 January 2019, which is 11% excess. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- Looking to weather condition, Complete training, skiffing and cleaning work has to be done in tea.
- Intercultural operations on already sown berseem and oats for fodder of Rabi season also advised.
- Add mulch material in space between two rows of vegetables crops for conservation of soil moisture and maintaining the soil temperature.
- Advised for Intercultural operations of radish, carrot, turnip, palak and methi carrot, broccoli, lettuce can be done.
- It is optimum time for raising the nursery of winter flowers in polyhouses.
- Farmers are advised to start earthing-up in potato if crop has attained a height of 15-22 cm.
- Apply manures and fertilizers in mango and other orchard gardens. Wrapping of plastic sheets around mango trunk should be done for preventing climbing of young mealy bugs. Apply grease to seal any cracks in the polythene sheets

Uttrakhand

Uttrakhand has received 51.1 mm of rainfall during 01 to 24 January 2019, which is 51% excess. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is above normal for both the weeks.

- Widespread rainfall/snowfall activities had been observed over the region in past few days, farmers are advised to avoid fertilizers & chemical applications due to excess soil moisture. To

save the animal from cold, dry grasses should be used as bedding material in cattle sheds. Door and windows should be covered properly so that cold wind could not be entered in animal shed. Young calves should be covering gunny/jute bags during night. Ajwain and jaggery (gur) also be given to animals.

- In mushroom cultivation, use the electric heater to maintain the room temperature. Allow fresh air in room 2-3 times during the day. Pruning of temperate fruit plants like apple, pear, peach, plum etc should be started. Apply Chaubatia paste/ Bordeaux paste to pruned cuts. Staking of budded or grafted nursery plants of temperate fruits to avoid snow damage. Basin should be prepared in temperate fruit plants and right quantity of dung manure, Nitrogen and Phosphorous should be applied in the field.

Jammu

Rainfall received during 01 to 24 January 2019 over Jammu is 126.8 mm, which is 105% excess. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) over Jammu is above normal for week-1 and normal for week-2.

- Due to present rainfall, drain out excess water from the wheat field under water stagnation condition.
- Due to favourable weather conditions, monitor mustard crop for alternaria blight, if observed spray mancozeb @ 0.25% to control alternaria blight.
- Farmers are advised to monitor the crop for wilt and blight attack, if observed apply Bavistin/carbendazim @ 3gram/litre of water.

Andhra Pradesh

Amount of rainfall received over Anantapuram is 0.0 mm (100% deficit) during 01 to 24 January 2019. The extended range weather forecast provided for next two weeks (25 to 31 January and 01 to 07 February) is below normal for week-1 and above normal for week-2.

- Fall army worm incidence is noticed in Jowar crop .Due to decrease in temperatures, fall army worm spread is reduced. Hence, farmers are advised to monitor pest and take up control measures. If necessary, farmers are advised to take up spraying of Emamectin Benzoate @ 0.5 g/l or Lambda cyhalothrin@1ml/ l of water for control of fall army worm.
- Incidence of fall army worm is observed in maize crop hence, farmers are advised to monitor pest and take up control measures. If necessary, farmers are advised to take up spraying of Emamectin Benzoate @ 0.5 g/l or Lambda cyhalothrin@1ml/ l of water for control of fall army worm.
- Pink boll worm incidence observed in final pickings of cotton crop in Kurnool district; Farmers are advised to go for spraying of Quinalphos@ 2ml/lit or Chlorpyrifos@ 2.5 ml/ lit or Thiodicarb @1g/lit for control.
- As the present weather conditions are favourable for leaf hopper and anthracnose in mango, farmers are advised to spray Lambda cyhalothrin 5% EC @ 1 ml. + Kantaf 2 ml. per liter of water.
- Incidence of leaf folder and stem borer observed in rice crop in southern and scarce rainfall zone. Farmers are advised to take up spraying of acephate @ 1.5g/l or cartap hydrochloride @2g/l or chlorpyrifos@ 2.5 ml/ lit.

- Prevailing low temperatures may lead to spikelet sterility in rice crop which is at flowering stage. Farmers are advised to remove the standing water and re-irrigate the crop and spray 2% KNO₃ to overcome the situation.

Disclaimer: *The predictability of weather depends on many factors which are dynamic in nature. The success of agromet advisories provided here depends on the accuracy of the forecasts. In no event will India Meteorological Department (IMD) and Indian Council of Agricultural Research (ICAR) be liable to the user or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of the information on this bulletin.*